If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A

C-A OPERATIONS PROCEDURES MANUAL

14.8.2 EMS Training for Vacuum Lab Operations

Text Pages 2 through 5

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: ***Signature on File*** _____
Collider-Accelerator Department Chairman

Date

M. Van Essendelft

14.8.2 EMS Training for Vacuum Lab Operations

Environmental Training Package for Vacuum Lab Operations

This package has been designed to aid in the delivery of required job-specific training for the following vacuum-lab activities identified in the environmental process assessment

- Pump refurbishment
- Flange enamalization
- Parts washing
- Bead blasting
- Radioactive, hazardous and mixed waste generation

Your position has been determined to have significant potential to impact the environment. Thus, C-A Department Management has prepared the questions & answers on the following pages for your specific work/processes.

This environmental material is incorporated into your current job and procedure training. If you have specific questions about this information after you have read the material, contact the C-A Department ESH&Q Division Head, Ray Karol (mailto:rck@bnl.gov).

You may keep this material as a handout and use it as a reference aid.

This specific training course is linked to your job-training assessment (JTA). You must read and acknowledge this material as part of the qualification to perform vacuum lab operations. Please fill out the Read and Acknowledgement form and return it promptly.

Read & Acknowledgement Form

Environmental Process Evaluation Title: Vacuum Lab Operations

Environmental Aspects: Hazardous Waste, Regulated Industrial Waste, Radioactive Waste, Mixed Waste, Atmospheric Discharge, Liquid Discharge, Storage/Use of Chemicals

Contacts for Further ESHQ Information:
Associate Chair for ESHQ, E. Lessard
Head of ESHQ Division, R. Karol
Environmental Coordinator, J. Scott
Environmental Compliance Representative, M. VanEssendelft
ESH Coordinator, A. Etkin
Industrial Hygienist, P. Cirnigliaro
Radiological Control Division Representative, P. Bergh
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Quality and Assessment Manager, D. Passarello
Self Evaluation Program, J. Maraviglia
SHS Representative, E. Lacina
Source Custodian, P. Cirnigliaro
Tier 1 Coordinator, A. Etkin
Training Manager, J. Maraviglia
Training Records, A. Luhrs
Work Control Manager, P. Cirnigliaro

Course Objective: Because your work activities have been identified as having significant potential to impact the environment, this course has been designed to provide you with the job-specific information that you must know to protect the environment.

1) What potential impacts to the environment are associated with your activities?

- In the maintenance of mechanical pumps, oils and greases can be released. In maintenance of ion pumps, mechanical cleaning, chemical cleaning or heat baking, the release of radioactive materials or hazardous chemicals may result. The following materials in your work may have adverse impacts if improperly handled:
    - Spent o-rings and gaskets may be radioactive
    - Scrap metal may be radioactive or hazardous or both
    - Spent vacuum pump oil
    - Oily rags may be radioactive
    - Aluminum oxide beads may be radioactive
    - Vacuum cleaner contents may be radioactive
    - Silver solder waste is a hazardous waste
    - Chemicals such as acetone and other cleaners may be hazardous

2) What consequences may result if your operations were to impact the environment?

- Hazardous, industrial or radioactive waste mismanagement could contaminate the environment and incur RCRA or local agency penalties.
- Improper water discharges to the sanitary sewer system could result in a violation of the BNL State Pollutant Discharge Elimination System (SPDES) permit

- Improper release of radioactive materials to uncontrolled areas may result in enforcement actions under Federal Rule 10CFR835
- Improper handling of waste can create loss of regulator and public trust

3) What benefits or positive effects would you notice with improved environmental performance?

- Safer, cleaner workplace
- Clear roles and responsibilities
- Improved relationship with regulators and the public
- Control of disposal costs
- Reduced emissions

4) What role and responsibility do you have for these potential impacts and environmental performance?

My responsibilities are

- To ensure Hazardous, Radioactive and Industrial wastes are handled according to C-A procedures
- To ensure liquid effluents are handled according to C-A procedures
- To take action when controls fail
- To create and keep appropriate records relative to operational controls
- To contact supervision if unsure of how to perform the work or if the procedures are unclear or incorrect

5) What controls or procedures are implemented to reduce the potential for emergency?

- C-A-OPM 1.15, Liquid and Airborne Effluents
- C-A OPM 8.20, Procedure for Handling and Disposing of Hazardous Waste
- C-A OPM 8.20.2, Radioactive Waste Disposal
- C-A OPM 8.22, Procedure for Handling and Disposal of Non-Hazardous and Recyclable Solid Waste
- C-A OPM 8.20.1, C-A Hazardous Waste Trailer (HWT) (90 Day Accumulation Area)
- C-A OPM 2.28, Enhanced Work Planning (C-A version of ES&H Std. 1.3.6)
- Satellite Accumulation Area
- Chemical Management System
- Tier I program and self-evaluations

6) How would you respond in an emergency to reduce the potential for environmental impact and what actions could be taken to mitigate the event?

- See C-A OPM 3.0, Local Emergency Plan for the C-A Department
- Call Spill Response Hotline – X2222 or 911 (If calling from a cell phone, dial (631) 344-2222)

7) What pollution prevention and waste minimization techniques have been or could be considered to reduce or eliminate the potential to impact the environment?

- Purchase chemicals and cleaners in bulk or as concentrates and we fill reusable plastic trigger spray bottles as an alternative to using aerosol cans or disposable spray bottles

- Use less hazardous substitutes for acetone such as ethyl alcohol or isopropyl alcohol and still meet performance requirements for the job

Suggestions or comments about pollution prevention or waste minimization are always welcome by C-A management.

8) Are there any key Environmental-specific Competency Requirements for this position?

- None.

Additional Environmental Information:

Click on the items below to learn more about C-A Vacuum Lab Operations.

- Process Assessment for C-A Vacuum Lab Operations
- Environmental Management Program for C-A
- Operational Control Form for C-A Vacuum Lab Operations